

- The development of the CheMin mineralogy instrument and its deployment on Mars
(and latest results from the Mars Science Laboratory rover *Curiosity*)

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Abstract: The CheMin instrument (short for “Chemistry and Mineralogy”) on the Mars Science Laboratory rover *Curiosity* is one of two “laboratory quality” instruments on board the *Curiosity* rover that is exploring Gale crater, Mars. CheMin is an X-ray diffractometer that has for the first time returned definitive and fully quantitative mineral identifications of Mars soil and drilled rock. I will describe CheMin’s 23-year development from an idea to a spacecraft qualified instrument, and report on some of the discoveries that *Curiosity* has made since its entry, descent and landing on Aug. 6, 2012, including the discovery and characterization of the first habitable environment on Mars.